DOCUMENT RESUME

ED 451 690 EF 005 894

TITLE	Guide to School Renovation and Construction: What You Need To Know To Protect Child and Adult Environmental Health.
INSTITUTION	Healthy Schools Network, Inc., Albany, NY.
PUB DATE	2000-00-00
NOTE	7p.
AVAILABLE FROM	Health Schools Network, Inc., 773 Madison Avenue, Albany, NY 12208 ($3). Tel: 518-462-0632; Fax: 518-462-0433; Web site: http://www.healthyschools.org.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Child Health; *Educational Facilities Improvement; Elementary Secondary Education; *Guidelines; *Health Conditions; Public Schools; *School Construction
IDENTIFIERS	New York

ABSTRACT

This guide presents cautionary tips for protecting children's health during school renovation and construction projects, the New York state laws regarding school renovation and construction, and the steps the laws require to eliminate dangerous conditions for children during these projects. Included is a checklist of uniform safety standards during school renovations and construction and several examples illustrating the negative outcomes when districts renovated or constructed their schools without regard to the effects on children's and adults' health. Selected resources for additional information are provided. (GR)

Reproductions supplied by EDRS are the best that can be made
from the original document.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Claire L. Barnett

ED 431 690

Guide To School Renovation and Construction:

What You Need to Know to Protect Child And Adult Environmental Health

Healthy Schools Network, Inc.
773 Madison Avenue • Albany, NY 12208 • Tel: 518-462-0632 • Fax: 518-462-0433 • www.healthyschools.org • $3.00 • ©2000

Hazards to Children During Renovation And Construction

Schools are required to provide a healthful, safe learning environment. Construction and renovation projects conducted while school is in session severely test this responsibility and often present unnecessary risks to students and staff. Some environmental hazards that can occur during school renovation and construction include:

- Lead-contaminated debris
- Asbestos fibers
- Wood, sheet rock, cement dust, and dust contaminated with lead/asbestos/molds
- Fumes from construction equipment (diesel fuel from heavy machines)
- Fumes from toxic products (paints, sealers, glues, varnishes or urethanes, roofing tar)
- Excessive, loud noise
- Fumes from new furnishings and equipment (copiers, carpets, new particle board or plywood)

School occupants at higher risk for health problems include all children, pregnant women, the elderly, and those with chronic illnesses or impaired immune systems.

This guide details the regulations schools must follow during renovation and construction to protect children and adults from hazards. Parents or others who care about the health and safety of children must be informed about the law and vigilant about its implementation.

Children's Health Is Affected By Their Environment

Why You Need To Pay Attention!

Children's health is uniquely affected by the environment. Today, children are growing up with complex environmental threats to health ranging from asthma-inducing air pollution to toxic chemicals. Children are not just little adults and are especially vulnerable to environmental risks because:

- Their bodies are still developing
- They proportionately eat, drink, and breathe more per pound of body weight than adults
- They are exposed to more environmental threats
- They are less able to identify or protect themselves from exposures to environmental hazards

Continued on page 2

EF 005 894

BEST COPY AVAILABLE

The Rights of Kids and Parents to Healthy, Safe Schools

★ Every child has a right to an environmentally safe and healthy learning environment that is clean and in good repair. Schools should serve as role models for environmentally responsible behavior.

★ Every child, parent, and school employee has a "right-to-know" about environmental health issues and hazards in their school environment.

★ School officials and appropriate public agencies should be held accountable for environmentally safe and healthy school facilities.

★ Schools should serve as role models for environmentally responsible behavior.

★ Federal, state, local and private sector entities should work together to ensure that resources are used effectively and efficiently to address environmental health and safety conditions.

"Guiding Principles of School Environmental Quality" adopted by New York State Board of Regents, 1994

Why You Need To Pay Attention!

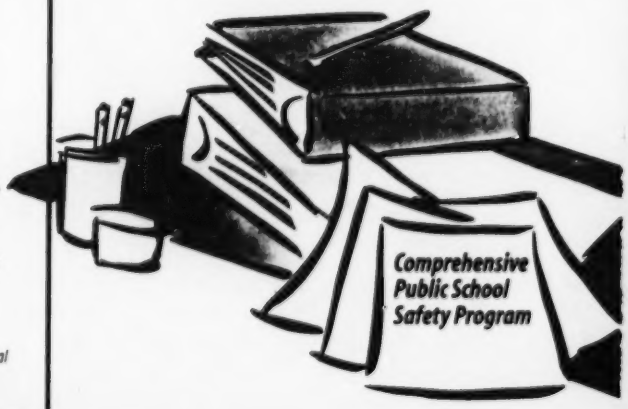
Continued from page 1

There is growing evidence that contaminated indoor air can produce verbal, perceptual, motor and behavioral disabilities in children. It can also cause hearing impairments, irritability and developmental delays. Children who are asthmatic, allergic, chemically sensitive or are health-impaired may need special protection to promote optimal health and learning. There are more children than adults in schools. Children are required to attend school and may be there with the early bus run, through breakfast, recess, lunch, more classes, and into after-school programs, sometimes leaving after dinner. Schools are, on average, four times more densely occupied as office spaces. No school is required to report pupil illness or injury. Schools are not required to hire school nurses.

(Sources: National Academy of Sciences, American Academy of Pediatrics, American Public Health Association, US Environmental Protection Agency, National Institutes of Environmental Health Sciences, Agency for Toxic Substances and Disease Registry.)

New York State Laws on School Renovation And Construction

In 1999, New York State adopted new regulations known as the "Comprehensive Public School Safety Program." Within these regulations, the Uniform Safety Standards provide some health protection for children and other school building occupants during renovation and construction. The Board of Education of each school district, including New York City, and each Board of Cooperative Educational Services (BOCES) is required to ensure that all school building-level renovation and construction plans, specifications, or other work in occupied facilities complies with health and safety procedures. The "checklist" on the next page provides a specific list of requirements/actions that must be taken in schools.



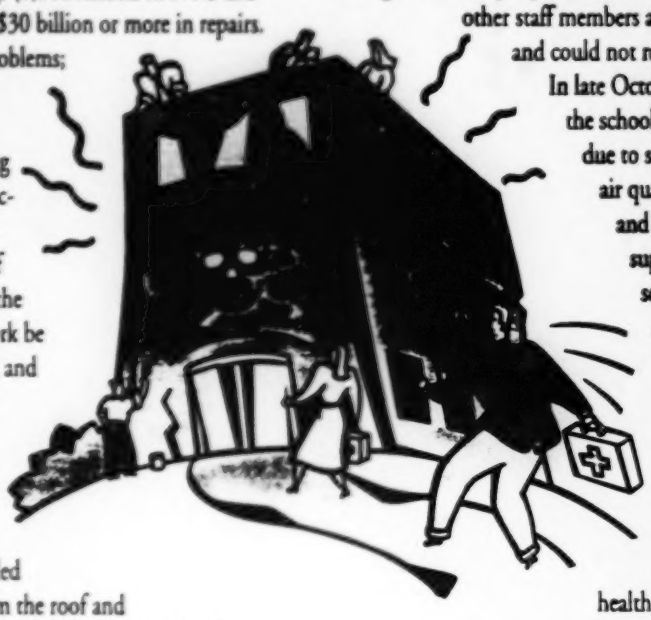
Comprehensive Public School Safety Program: CHECKLIST of Uniform Safety Standards During Renovation and Construction

- ☐ Pre-construction notification of parents, staff, and the community two months in advance of a construction project of $10,000 or more to be conducted while school building is occupied. If the project is an emergency, notice must be provided as soon as practicable. Notice may be met by publication in district newsletters, direct mailings, or holding a public hearing on the project.
- ☐ Pre-construction testing and planning so that safety is addressed in bid specifications; all areas to be disturbed during renovation or demolition must be tested for lead and asbestos and procedures to protect occupant health must be included in the final construction documents for bidding.
- ☐ Monitoring of construction and maintenance activities for compliance with minimum requirements of a certificate of occupancy and to ensure there are no safety violations. (Investigation and response to complaints relating to health and safety as a result of construction and maintenance activities.
- ☐ Health and Safety (H&S) Committees, which include representatives from district officials, staff, bargaining units and parents, must be created in every school district.
  Procedures must be established for involvement of the H&S Committee to monitor construction to include the project architect, construction manager, and the contractors. In large cities (one million or more), procedures for protecting health and safety during construction must be submitted to the Commissioner of Education for approval. The H&S Committee must also be involved in the investigation and response to complaints.
- ☐ The District Emergency Plan must be updated to accommodate the construction process, including an updated emergency exit plan, with, if necessary, temporary exits. Provisions must be made for an emergency evacuation and relocation or release of students and staff in the event of a construction incident.
- ☐ Fire drills must be held to familiarize students and staff with temporary exits and revised emergency exits.
- ☐ General safety and security standards, including:
  - Construction materials must be stored in a safe and secure manner;
  - Fences must be maintained around supplies and debris;
  - Gates must be locked unless a worker is in attendance to prevent unauthorized entry;
  - Overhead protection and warning signs must be provided;
  - Workers must wear identification badges.
- ☐ Separation of construction areas from occupied spaces must occur for those construction areas under the control of a contractor.
  Provisions must be made to prevent the passage of dust and contaminants into occupied parts of the building and periodic inspections must be made to prevent exposures to these materials. Gypsum board must be used in areas where fire could occur, and heavy-duty plastic may be used only for a vapor, fine dust or air infiltration barrier, and not to separate occupied spaces from construction areas. All occupied parts of the building affected by renovation must be cleaned at the close of the day and all school buildings must maintain health, safety and educational capabilities while classes are in session.
- ☐ Maintenance of exiting and ventilation requires plans and specifications for isolating equipment, materials, people, dust, fumes, odors, and noise during construction, and details how adequate ventilation will be maintained.
- ☐ Fire and hazard prevention, including no smoking on school property, assurance that equipment does not block exits, and fire extinguishers and smoke alarms maintained.
- ☐ Noise abatement to assure construction operations do not exceed 60 decibels in occupied spaces (i.e. isolating students from jackhammers and power saws).
- ☐ Control of chemical fumes, gases, dust and other contaminants. Bid specifications must allow time for "off-gassing" of volatile organic compounds, specifically in glues, paints, furniture, carpeting, wall coverings, and drapery.
- ☐ Building materials or furnishings which "off-gas" chemical fumes or other contaminants must be aired out in a well-ventilated, heated warehouse before they are brought to the school for installation, or "off-gassing" period must be scheduled between installation and use of the space. If work generates toxic gases that cannot be contained, it must be done while school is not in session. Material Safety Data Sheets must be located on site for all products used during construction.
- ☐ Asbestos and lead abatement protocols must be in compliance with state and federal law.
- ☐ Testing and mitigation of radon must be conducted.
- ☐ Post construction inspections must be conducted. An opportunity for a walk-through inspection by the H&S Committee must be provided to confirm that the area is ready to be reopened for use.

If you have questions or need a copy of the regulations, please call the Healthy Schools Network at 518-462-0632.

Watch Out! Could This Be Your School?

New York State's 4,200 classroom buildings (1,100 schools in NYC and 1.1 million pupils) require an estimated $30 billion or more in repairs. This includes faulty wiring; fire safety problems; poor ventilation and indoor air quality; inadequate plumbing, lighting, heating and cooling systems; unsafe pest control, and serious overcrowding (USGAO, 1996). While renovation and new construction are welcome solutions to the problems in crumbling schools, these projects can damage the health of children and school staff and be highly disruptive of the educational process. It is therefore critical that all work be conducted in such a way that health, safety, teaching, and learning are not compromised. Below are just a few examples of "bad things that happened to good people" in schools when renovation or construction was not conducted with children's health in mind.



PS 13 (Brooklyn, NY) A 15-year-old student was killed when a brick falling from the school building fell from the roof and struck her head, fracturing her skull. The brick, which was being used to hold down a tarp during construction, was blown off by the wind. It was later discovered that the construction project officer failed to require a sidewalk shed and allowed a fence to be removed from the area where the child was killed.

Milton Terrace Primary School (Ballston Spa, NY) During August of 1998, and well into student orientation for the new school year, a new polyurethane resin gym floor was installed in the school. Volatile organic chemicals, including toluene, ethylbenzene, xylenes, methyl ethyl ketone, and methyl isobutyl ketone were being poured during kindergarten orientation. As much as 30,000 pounds of chemicals were used. Children and staff complained of bad odors and a range of health problems. After teachers and parents joined together to protest at a school board meeting, the gym was closed. Health experts say that while the "off-gassing" will continue to decrease over time, it will never reach zero, and could take years to reach undetectable levels. The district has decided to remove and replace the gym floor.

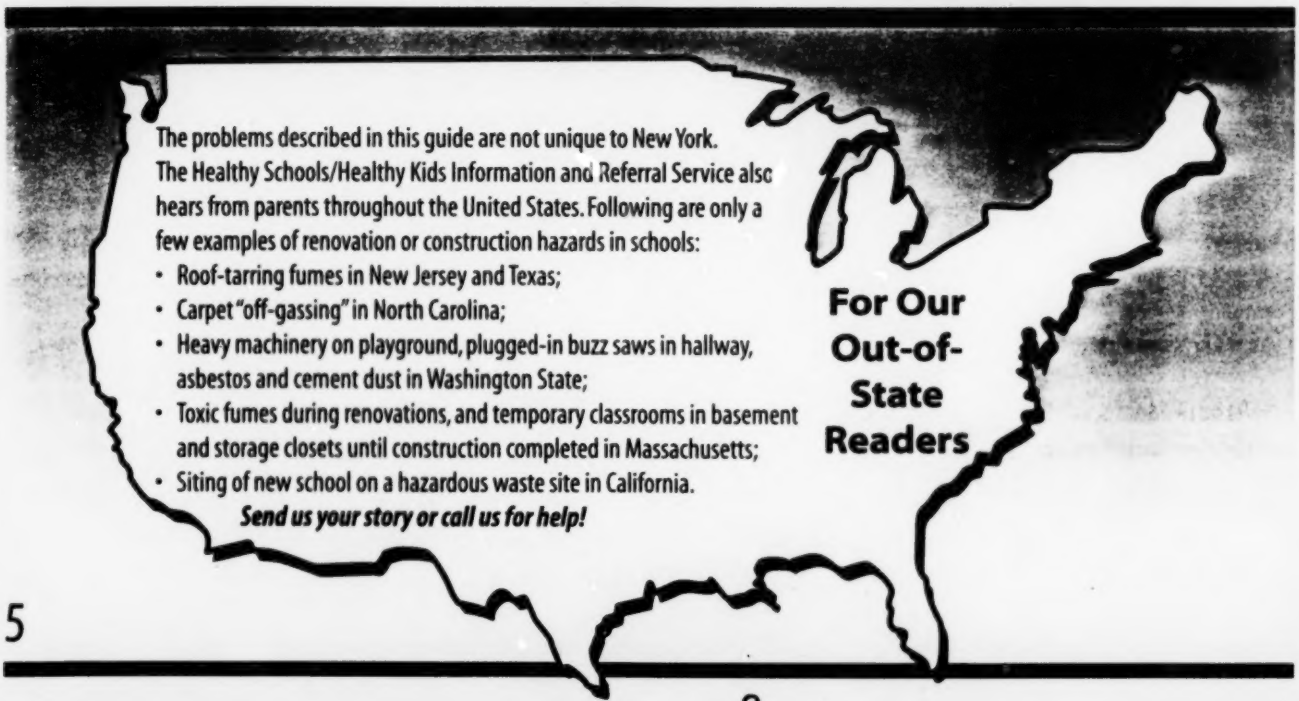
Jefferson Middle School (Jamestown, NY) In September of 1992, school children and faculty were exposed to highly toxic volatile organic compounds (VOCs) during a renovation project. New carpeting was installed throughout the school using two adhesives: a contact cement containing trichloroethane, and a glue containing mineral spirits. A week later, administrators began to receive complaints from students and staff. Symptoms such as headaches, dizziness, muscle fatigue, eye irritation, sinus problems and difficulty breathing were reported. A teacher collapsed at school and was later diagnosed with peripheral nerve damage. Six other staff members also became ill and could not return to work. In late October of 1992, the school was closed due to severe indoor air quality problems and insufficient air supply. The school reopened again at the end of October, but closed again in early November due to continuing health complaints.

Lewisboro Elementary School (Katonah, NY) During the Summer of 1998, contractors working on the building were cited by the Department of Labor (DOL) for four asbestos violations after it was discovered that asbestos tiles, pipe insulation, tiles, wall plaster and ceilings were disturbed by unlicensed workers in hallways, classrooms (including a kindergarten room) and the gym. DOL ordered that work cease until all areas were decontaminated. The school opened in September. During a school board meeting, parents were told that no work would be conducted during school hours. A week later, a construction crew using jackhammers removed tiles containing asbestos from the kitchen floor while the cafeteria doors were wide open, allowing dust and debris to enter while children were having lunch. The US Environmental Protection Agency (EPA) cited the school for asbestos violations, a worker and parents filed lawsuits, and later, the EPA Criminal Investigation Division issued a subpoena asking the school to turn over all asbestos-related documents.

Eliminate Dangerous Conditions for Children: *Take More Steps Than the Law Requires*

No child should be forced to drop out of school because of discomfort or poor health created by school renovations or construction. **Dangerous conditions and other hazards are avoidable. While the current law as cited in this Guide is a good first step, there are additional actions you can take to provide better protection for children.** The following guidelines have been recommended by the New York State Board of Regents *(Guiding Principles of School Environmental Quality, 1994)* and endorsed by the Healthy Schools Network, Inc.:

- Schools should avoid engaging in renovation and construction projects while school is in session, but, if such projects must be conducted, affected areas must be isolated from students and school personnel.
- School officials must accommodate (e.g., relocate) those individuals affected by noxious emissions from construction that cannot be isolated from building occupants.
- Schools must conduct environmental site audits for new building construction, including adjacent land, to identify potential environmental health hazards.
- Schools submitting building plans and specifications to the State Education Department for the Commissioner's approval must not place air intake vents adjacent to school bus loading/unloading areas, loading docks, or air exhaust vents.
- Schools must use construction materials and school supplies that are less toxic and less hazardous to building occupants.
- School buildings, when designed or renovated, should use design principles and construction materials that further the goals of conserving energy, ensuring good indoor air quality, pest-proofing, radon-proofing, ease of maintenance (e.g. durable, hard-surface flooring) and include other factors contributing to positive learning environments.
- Schools should consider creating "chemically clean" or environmentally safer classrooms (portable or within schools) for asthmatic, allergic, or chemically sensitive students who have not been able to attend classes within their school buildings.



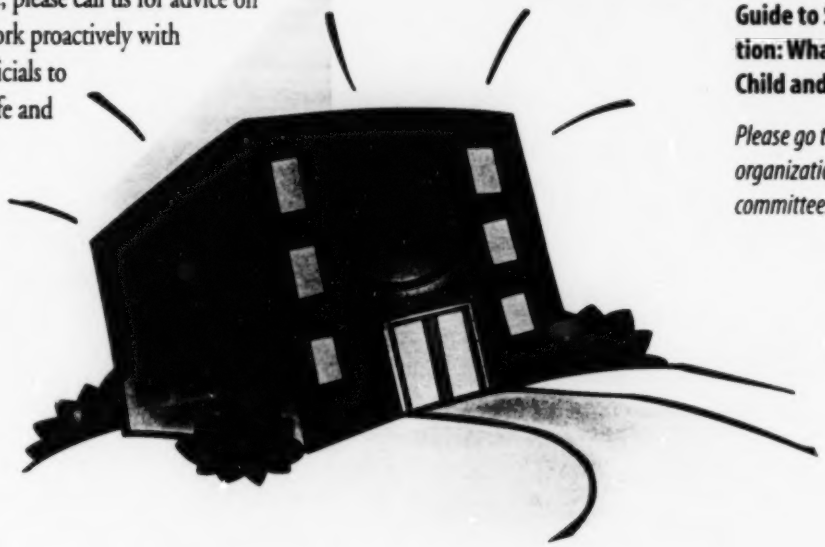
The problems described in this guide are not unique to New York. The Healthy Schools/Healthy Kids Information and Referral Service also hears from parents throughout the United States. Following are only a few examples of renovation or construction hazards in schools:

- Roof-tarring fumes in New Jersey and Texas;
- Carpet "off-gassing" in North Carolina;
- Heavy machinery on playground, plugged-in buzz saws in hallway, asbestos and cement dust in Washington State;
- Toxic fumes during renovations, and temporary classrooms in basement and storage closets until construction completed in Massachusetts;
- Siting of new school on a hazardous waste site in California.

Send us your story or call us for help!

NEED HELP?

CALL US AT 518-462-0632. The Healthy Schools Network maintains the Healthy Schools/Healthy Kids Information and Referral Services, offering hands-on guides, factsheets, and information packets on a wide variety of school health and safety issues. We provide technical assistance, workshops, and presentations, as well as an expert referral service. If you learn about a renovation or construction project at your child's school or your workplace, please call us for advice on how to work proactively with school officials to achieve safe and healthy results.



Select Resources

US Environmental Protection Agency, "Tools for Schools", a self-help kit for resolving indoor air quality problems in schools. Contains a Renovation and Repair Checklist. Free copies are available through your local BOCES or they can be purchased from the EPA by calling (202) 512-1800 or faxing (202) 512-2250.

Available from the Healthy Schools Network:

Right-to-Know Factsheet: Using NYS Freedom of Information and Education Laws, $1.

Access to Decision-Making Factsheet: Using the NYS Open Meetings Law, $1.

Student Health Survey, $1.

Guide to School Health and Safety Committees: How to Promote Child and Adult Environmental Health Protection, $3.

Guide to School Renovation and Construction: What You Need to Know to Protect Child and Adult Environmental Health, $3.

Please go to www.hsnet.org for links to other organizations that can help you and your committee.

This Guide was made possible through a generous grant from the Robert Sterling Clark Foundation.

Healthy Schools Network, Inc.

773 Madison Avenue • Albany, NY 12208
Tel: 518-462-0632 • Fax: 518-462-0433
www.healthyschools.org

©2000 HEALTHY SCHOOLS NETWORK, INC.

Recycled, chlorine-free paper, soy-based ink